Support News

June 27, 1994

Volume I, Issue 5

"Get Off the Highway and Into the Alley™"

In This Issue...

A bi-weekly publication of Apple Computer, Inc. – Customer Services Division

Inside Information...

About the Information Alley

The Information Alley ™ is a publication of Apple Computer, Inc., Support Information Services. It is available to all Apple customers and computer users through a variety of on-line services and direct email capability. The goal of the Information Alley is to help Apple computer users get full use of their Apple computers, peripherals, and software.

Articles chosen for the Information Alley come from many sources, both from inside Apple Computer and from our customers and users. Sources include the Technical Information Library, Apple Assistance Center, New Technology Group, World Wide Product Technical Support, Apple Users Groups, and other technical groups and organizations.

Submissions and Letters to the Information Alley

We welcome articles that help Apple computer users become more knowledgeable about the functionality of their systems, explain or illustrate complex features or functions, or that describe technical tips or techniques. Send submissions to:

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We also welcome letters to the editor and suggestions for future articles. Please send all letters to the preceding address.

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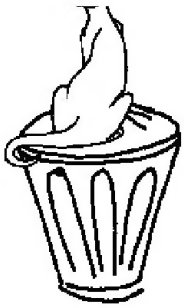
If you print the Alley, please share when done!

Thoughts from the Alley Cat (Editor)

Your Feedback to Us



By Janet Christian

We recently compiled all of the feedback forms we've received for the first three issues of the Information Alley. We've received 86 copies of the Tell Us What You Think feedback form. We appreciate them all; especially those that included helpful comments and suggestions. Here is a quick look at the totals. The percentages are rounded to the nearest whole number:

Were the articles interesting and informative?

Yes	%	No	%	Mixed	%
80	93	5	6	1	1

How was the technical depth of the articles?

Not enough	%	About right	%	Too much	%
18	21	68	79	0	0

Did you find any specific article especially useful?

Yes	%	No	%
66	84	13	16

Did you find any specific article impractical?

Yes	%	No	%
17	24	55	76

Is the format and layout easy to follow?

Yes	%	No	%	Mixed	%
59	69	22	26	5	6

Is the type easy to read?

Yes	%	No	%	Mixed	%
65	76	19	22	2	2

Note: The "No" responses to this question were high in Issue 2 due to the bad font quality in the first copy we uploaded.

Do the graphics enhance or clutter the magazine?

Enhance	%	Clutter	%	Mixed	%
76	89	8	10	1	1

Did you read it online or did you print it?

Online	%	Print	%	Both	%
35	41	36	42	15	17

By far the biggest single additional comment was to request a better paging capability in Common Ground. I have passed these comments on to the folks at No Hands Software, who are working on a solution.

Where to Find the Information Alley

With Information Alley distribution spreading, the Where to Find the Information Alley... column was getting a bit unwieldy. Therefore, we will only include new locations in each issue where the Information Alley can be found. You can find a complete list of distribution locations in the Technical Information Library. You can also request the complete list through the Fax line (800-505-0171). Thanks to all of those individuals who are helping redistribute the Information Alley to so many BBSs and local/regional systems.

The SCSI Connection

By Murray Wheeler

The Connection: SCSI

Most storage devices, such as hard drives, CD-ROM drives, Bernoulli and Syquest drives, rewriteable optical drives, and tape drives, are connected to the Macintosh using the Small Computer System Interface (SCSI) (pronounced SKUH-zee). Other SCSI peripherals include scanners and some printers. Basically any device that uses the 25-pin port can be attached via the SCSI. The 25-pin port is located on the back of your desktop Macintosh. You can recognize this port by the diamond-shaped icon above it:

On PowerBook models the port is a 30-pin square connector. Your Macintosh can have a total of seven SCSI devices connected to it (the Workgroup Server 95 can have up to 20 devices). Internal hard drives, internal CD-ROM drives, and other internal storage devices are included in this limit of seven devices. This does not include floppy drives, which are not SCSI devices.

SCSI Termination

The most important thing to understand about using SCSI devices is proper termination. Terminating a SCSI bus preserves high transmission speeds, and if the terminator is properly placed, cleans up the signal along the entire length of the line. Terminators also provide a reasonable degree of electrical noise immunity. The most important reason to terminate a SCSI bus is that termination is required for the bus to work! A bad signal anywhere on the chain can cause all of the SCSI devices, in some cases the Macintosh itself, not to function properly.

Terminator Types

Physically, terminators generally take three forms in the Macintosh world. Electrically, these types of terminators are equivalent and vary only in where and how they are installed.

ON-DRIVE terminators

These are known as resistor packs (or sips, or dips). You only remove them to add a second drive or to add a drive to a system where the mother board is terminated. They reside on the SCSI device itself and are almost always removable. Always note the orientation of the resistor packs before attempting to remove them! They are polarized and must not be inserted backwards.

External Terminator Blocks or Plugs

These are short "plug like" devices and are inserted between an external hard drive's SCSI connector and the SCSI cable, or on the second connector if one exists. Don't confuse these with the ON-DRIVE terminators. ON-DRIVE literally means on the drive (HDA) – not on the external connector.

"Mother Board" Terminators

These may look like a SIMM or a narrow plug. They are used only when there is no "internal" hard drive in the Macintosh.

Mother board terminators are inserted into the 50 pin SCSI connector on the Macintosh mother board where the cable for an internal drive would normally connect. These mother board terminators are keyed (a polarity notch) and must never be inserted backwards! Never use the external terminator when the drive inside a cabinet has terminators installed on it.

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Switched Termination

Some SCSI peripheral vendors also use "switched" termination. This means they have a type of switch that controls whether or not the device is terminated. The terminator is actually one of the first two types mentioned but is controlled electronically via a switch.

Making the SCSI Chain Work

There are several key points you need to keep in mind to make sure that all of your SCSI devices work correctly.

- **Only terminate the first and the last device.** In most cases, only the first and last SCSI device should be terminated. If the Macintosh has no internal hard disk drive (or other SCSI device) installed, then a mother board terminator should be installed. Macintosh computers sold without internal hard drives include this terminator, and many third party hard drive vendors sell them if you need one. If there is not an internal SCSI device, and if there is not an internal terminator present, then the first external device should be terminated.

  There are a few exceptions. If the bus is short (generally 18 inches or less) then it is best to terminate just one end. Also, if the total cable length between all devices is greater than 10 feet, the cable might need to be terminated at the 10 foot point in addition to each end. When "daisy chaining" three or more SCSI devices the total bus length often exceeds the 10 foot specification and may require three terminators in the chain to work properly. Do not add the third terminator unless you are having problems.

- **Never terminate the same device twice.** Never use a plug type terminator if the SCSI device inside the cabinet already has terminators installed on the drive.

- **Only use a black terminator on the Macintosh IIfx or LaserWriter IINTX.** The black terminator is a product from Apple and is for use only with the Macintosh IIfx and LaserWriter IINTX. It is an external plug type terminator and is only used "where and when" a normal external plug type terminator could be used. This black terminator differs (electrically) only slightly from a normal plug type terminator; it does not differ physically other than color. Its purpose is to compensate for some changes in the SCSI chip used in these two devices. All other Macintosh computers and Apple peripherals use standard gray terminators.

- **Always use high quality cables.** Use cables that are double shielded (foil and braid), such as Apple SCSI cables. Never use simple printer type RS232 cables, which are commonly used with DOS/Windows printers. Make sure the connector hoods (or shrouds) are each connected to the shield braid. Poor quality cables are often the case of seemingly mysterious SCSI problems.

- **Total SCSI Cabling should not exceed 19.6 feet (6 meters).** The total length of all cables used (all devices and cables added together) must not be greater than 19.6 feet. Don't forget to consider the internal cabinet wiring, which is generally about 1 foot on most SCSI devices.

- **Keep cables between devices as short as possible.** Generally, 18 to 24 inches is best, but never exceed 6 feet or you will most likely have problems. PowerBooks, some scanners, and possibly other devices

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refuse to work with cables over 24 inches in length.

- **Avoid mixing brands, types, or styles of cables.** Each cable has a different type of construction, impedance, and wire placement which can result in bus reflections. In mixed cable configurations some devices may simply not work even if all other guidelines are followed.
- **Check all SCSI devices on the SCSI bus to make sure that each has a unique SCSI ID number.** A number from 0-6 is used by the Macintosh to identify and distinguish between SCSI devices. The number 7 is always reserved for the Macintosh itself. Other devices include a factory set default, as this table indicates:

ID	DEVICE
0	Commonly used for an internal hard drive if present
2	Internal Apple CD-ROM drives
3	External Apple CD-ROM drives
5	Apple scanners
8 & 9	Always invalid number selections but may appear as options on some third party devices

If two devices have the same ID number, one or both may not start up, or they may damage files if they try to send data at the same time. Device manufacturers use many ways to set the SCSI ID number, including thimble, push switch, DIP switches, jumpers, and software. Check each device's documentation to see how to set its ID.

- **Always turn off the Macintosh and all peripherals before attaching/ detaching any cables or devices.** Doing otherwise could cause permanent physical damage to your computer or SCSI devices as well as the loss of important data. Attach the proper cables to their devices. Use the thumbscrews and metal clamps on the cables to maintain a tight, reliable connection. Do not over-tighten.
- **Use the same driver software for all storage devices.** If you have several storage devices from different vendors, you may encounter driver-level conflicts. Since device drivers load into RAM when the Macintosh is turned on, they can generate conflicts similar to INIT or extension conflicts. To eliminate these conflicts, you should reformat all of your SCSI storage devices with the same formatting software. Apple's formatting software, Apple HD SC Setup, only works with devices sold by Apple, so this isn't usually an option. However, there are several third parties that make "universal" formatters (such as Drive 7, Hard Disk Tool Kit, and Silver Lining) that format most of the storage devices available for the Macintosh.
- **Make a bootable floppy for testing.** Since System file corruption and extension conflicts can cloud the troubleshooting process, it is a good idea to make a bootable floppy to test SCSI problems. Configure the start-up disk with minimal drivers and extensions.
- **Check the drive with a utility.** Use Symantec's Disk First Aid or another utility to verify the integrity of a SCSI storage device. If two utilities disagree about the status of the drive, the best advice is to reformat.
- **When troubleshooting, isolate devices.** If you have followed all the rules without success, start to isolate devices. See if each one individually works correctly. If it does, then start to build the SCSI chain one device at a time. There may be a specific bad device, cable, terminator, connector,

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or software driver causing the problem.

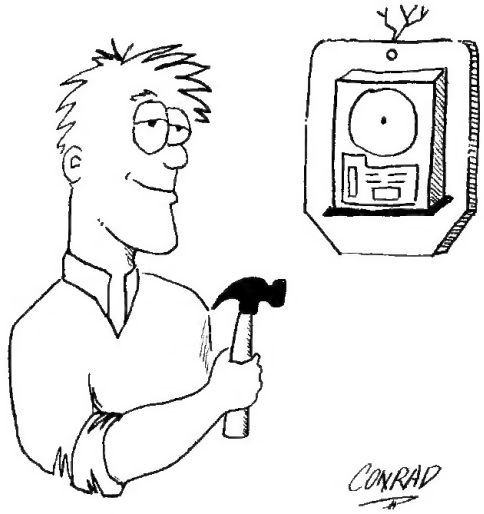
- Reformat the storage device. Corrupt drivers cannot usually be detected by diagnostic utilities. If you are unable to get a particular device to work by itself, consider reformatting to be sure the driver is good.

PowerBook Requirements

All the preceding rules apply to PowerBooks. In addition, PowerBooks may require special attention. Consider these points:

- PowerBook computers do not supply termination power; using a terminator may keep the PowerBook from either booting, or seeing the external SCSI device. Depending on the device, you may or may not need a terminator. This depends on whether the device supplies terminator power. If you use a terminator, be sure you place it at the very end of the SCSI chain.
- Termination on PowerBook computers is supplied by the internal hard drive. PowerBook computers depend on the internal hard drive to supply termination, so that they are properly terminated when placed in SCSI disk mode. In SCSI disk mode the PowerBook is just another hard drive in the SCSI chain because all other subsystems have been shut down. Therefore, when a PowerBook is in SCSI disk mode, it should be the last device in the SCSI chain.
- It is not possible to have more than one PowerBook on a single SCSI bus in SCSI disk mode. If you have two PowerBook computers and other devices on the chain, one PowerBook must be the very last device in the SCSI chain (in SCSI disk mode) and the second PowerBook must be at the beginning of the chain. In this situation, one PowerBook is the CPU and the other is in SCSI disk mode.
- Because termination power is not supplied by the PowerBook, Apple advises that you have all connected SCSI devices powered on.
- Because of the lack of termination power, the maximum cable length to the first device should be no longer than 18 inches.
- Note the difference between the disk adapter cable (used only for SCSI disk mode) and the system cable (used to connect external devices to the PowerBook). The only true difference between these two cables is an extra pin in the adapter cable, which triggers SCSI disk mode in the machine.
- SCSI disk mode is supported on all PowerBook models with the exception of the 140, 145, and 170, and is only possible on the PowerBook Duo line when using the Mini Dock.
- PowerBook Duos do not rely on an external device to provide termination power. The Duo Dock provides termination power to the bus. They are actively terminated, which means they provide termination power and have the best architecture for termination of any other device on the bus.

Alternate Route • Darren Conrad

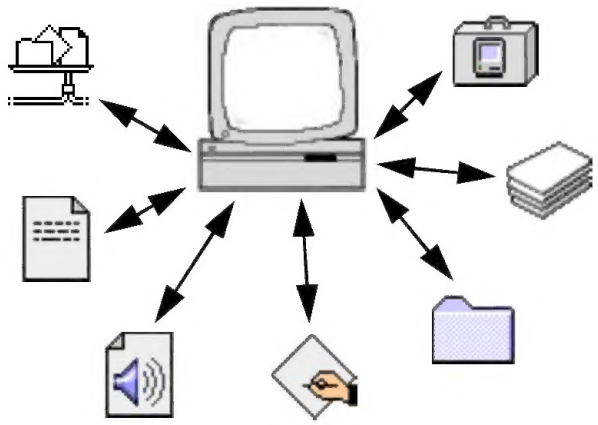


Bob mounts a hard disk.

The File Expansion Effect

By Stephanie Hahn

Do you find that small files take up more space on a larger drive than they do on a smaller drive? This article explains why this happens and what you can do about it.



The Hierarchical File System

Before discussing hard drive block allocation, and the intricacies of determining allocation block sizes and such, let's first review the Hierarchical File System, better known as HFS.

Below are some specifications and associated terminology used to describe the Macintosh HFS structure. The following numbers apply to both System 6 and System 7, and are current as of this writing.

Volume

A volume is either a full disk or a section of a disk, partitioned into separate parts. If you partition a single drive then each partition is considered a volume.

- The maximum volume size is 2 gigabytes
- The maximum number of volumes is limited 32
- The maximum file size is 2 gigabytes
- The maximum number of files on a volume is 65,536
- The maximum number of files in a folder is 32,767
- The maximum size of the data fork in a file is 2 gigabytes
- The maximum size of the resource fork in a file is 16 megabytes

Logical Block

A logical block is a unit of drive space composed of up to 512 bytes. A logical block is numbered from 0 to n, n being the last block on the volume – not necessarily the hard disk. Take the volume size, divide it by 512 bytes, and you have the number of logical blocks.

Allocation Block

An allocation block is a unit of storage on a volume, composed of one or more logical blocks. The larger the volume, the more logical blocks comprise one allocation block. The maximum number of allocation blocks per volume is 65,536.

In both the Macintosh and DOS environment, the maximum number of blocks on a driver is 65,536 because both Operating Systems address the allocation blocks with a 16-bit address. Drives larger than 512 MB cannot use a block size of 8K or less because there just aren't enough addresses. Thus, if a 2 GB drive is one Macintosh partition, the smallest file size allowed is 32K. (If you save a TeachText file with one character in it, it would take up 32K of disk space.) This means that the size of your hard drive determines the minimum size of each file.

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For example:

Volume Size	Allocation Block Size	Minimum File Size
32 MB	1	0.5 K
64 MB	2	1.0 K
128 MB	4	2.0 K
192 MB	6	3.0 K
256 MB	8	4.0 K
320 MB	10	5.0 K
384 MB	12	6.0 K
448 MB	14	7.0 K
512 MB	16	8.0 K
576 MB	18	9.0 K
640 MB	20	10.0 K
704 MB	22	11.0 K
768 MB	24	12.0 K
832 MB	26	13.0 K
896 MB	28	14.0 K
960 MB	30	15.0 K
1024 MB	32	16.0 K
1088 MB	34	17.0 K
1152 MB	36	18.0 K
1216 MB	38	19.0 K
1280 MB	40	20.0 K
1344 MB	42	21.0 K
1408 MB	44	22.0 K
1472 MB	46	23.0 K
1536 MB	48	24.0 K
1600 MB	50	25.0 K
1664 MB	52	26.0 K
1728 MB	54	27.0 K
1792 MB	56	28.0 K
1856 MB	58	29.0 K
1920 MB	60	30.0 K
1984 MB	62	31.0 K
2048 MB	64	32.0 K

Determining Allocation Block Size

Follow these steps to calculate the allocation block size:

STEP	ACTION
1	Take the size of the drive in megabytes and multiply it by 2000 (there are 2000 disk blocks in 1 MB of disk space).
2	Divide that number by 65,536, since the Macintosh can't have more than 65,536 allocation blocks.
3	Round this number up and multiply it by 512.

The result is the number of bytes in the allocation block. Here is an example using a 230 MB drive:

$$230 \times 2000 \div 65536 = 7.019$$
$$7.019 \text{ rounded up} = 8$$
$$8 \times 512 = 4096 \text{ bytes}$$

So what does this mean to you? The larger the hard drive, the larger the allocation block size, and the more space that is wasted on small files. If you have a large drive with a lot of small files, the hard drive space is being used less efficiently than if most of your files average 32K in size.

Volume Organization of HFS

The first two logical blocks (labeled 0 and 1) of a volume are the boot blocks. This is where the information for mounting the volume is stored.

The third logical block (labeled 2) is the Master Directory Block, or MDB for short. This block contains part of the data structure of a flat directory volume. It contains the volume information and the volume allocation block map. This block is where the information for the hard disk, such as number of files in the directory and the last time the drive was initialized, is stored.

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What You Can Do

So, can you do anything to decrease the file size on a large hard drive? One solution is to partition larger drives into smaller partitions, or logical drives, each with a maximum of 65,536 blocks.

However, for System 7.1, Apple doesn't offer a tool for creating multiple Macintosh partitions. Future versions of the operating system and HD SC Setup will support smaller file sizes on larger hard drives.

There are third parties that offer a solution for creating multiple Macintosh partitions. A few that we know of are:

- Hard Disk Toolkit (HDT) by FWB Software, Inc.
- SilverLining by LaCie Ltd.
- Micronet Utility by MicroNet Technology
- MicroTech Utility by MicroTech International
- Drive 7 by Casa Blanca Works, Inc.

Turning Off the LaserWriter Test Page on Startup

From the Technical Information Library

Normally, your LaserWriter prints a test page every time you turn on its power. This is the page with a large ampersand and other printer configuration facts on it. This article describes how you can disable this test page.

With a Macintosh

Use the LaserWriter Utility (System 7.0 or higher) and select "**Set Startup Page...**" from the Utilities menu. You are presented with an option to turn the Startup Page On or Off.

With an MS DOS Based System

A boolean value called **dostartpage** is stored in the persistent parameters of all LaserWriters. You change this value with these PostScript programs:

Disable Startup Page PostScript Program

This program disables the printing of a start-up page:

```
serverdict begin 0 exitserver
statusdict begin false setdostartpage
```

Enable Startup Page PostScript Program

This program enables the printing of a start-up page:

```
serverdict begin 0 exitserver
statusdict begin true setdostartpage
```

These programs can be sent via a PostScript downloading program, a word processor that supports straight ASCII output (no imbedded control codes), or entered while in PostScript Interactive mode.

Power Macintosh Native Applications

From the Apple Assistance Center Bulletin

As of this issue's publication date, here is a complete list (to the best of our ability) of native applications that are now available for the Power Macintosh:

COMPANY	APPLICATION	CATEGORY	TELEPHONE
About Software	5PM Term /IBM Mainframes 2.2	Networking	408-752-4242
	5PM Term /VAX & UNIX 2.2		
	5PM Term /AS/400 2.2		
	5PM Pro /Mac 2.2		
Absoft	Fortran 477	Utility	810-853-0050
Access Privilege SA	EasyTransfer 3.1	Networking	33.92-96-01-00
ACI	4D Compiler 2.2	Utility	408-252-4444
	Object Master	Database	
	Object Master Universal 2.5		
Adobe Systems	Illustrator	Design/Illustration	800-833-6687
	Photoshop		
Aetis-Protections Logicielles	Copy Protection	Utility	3393-53-09-87
Afga Gevaert N.V.	FotoLook 2.0	Professional Publishing	32-3-444-39-07
Aldus	Freehand	Design/Illustration	800-628-2320
	Pagemaker	Professional Publishing	
Aldus CoSA	After Effects	Specialty	206-628-4526
ALSOFT	Atlas 1.0.4	Education/ Entertainment	331-45-84-26-00
	GeoConcept		
Apple Computer	PhotoFlash	Professional Publishing	Authorized Apple resellers
Artifice Inc.	DesignWorkshop	Design/Illustration	503-345-7421
Artwork Systems N.V.	ArtPro 1.2	Professional Publishing	329-225-79-46
AS-PLUS B.V.	AS PLUS Bankaschriften	Office Productivity	31-2159-49490
Ashlar	Vellum	Computer Aided Design	408-746-3900
Atlas Software B.V.	PS Mail	Special Market	800-344-3468

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COMPANY	APPLICATION	CATEGORY	TELEPHONE
Auto•des•sys, Inc.	Form•Z	Animation/3D Rendering	614-488-8838
Baltic Business Systems	MacHansa Accounting II 2.0	Office Productivity	46-176-82230
B.E.M.E. R&D	ALIX (colors for printers)	Professional Publishing	331-69-91-26-30
Brossco Systems Oy	Voyant 2.0	Office Productivity	35.8-0-512-3130
Bungie Software	Pathways into Darkness	Education/ Entertainment	312-563-6200
Canto Software GmbH	Cumulus 1.2	Multimedia	800-332-2686
Casady & Greene	Conflict Catcher	Education/ Entertainment	800-359-4920
	Spaceway 2000		
Central Point Software, Inc.	MacTools 3.0	Utility	800-937-9842
Charles River Analytics, Inc.	Open Sesame!	Utility	800-913-3535
Claris Corporation	ClarisImpact	Office Productivity	800-3 CLARIS
	ClarisWorks		
Conley Corporation	SoftRAID	Peripheral	212-682-0162
Dantz Development	Retrospect	Utility	510-253-3000
Data Description	Data Desk	Technical Analysis	607-257-1000
DeltaPoint	DeltaGraph Pro 3	Spreadsheet/ Charting/Pres.	408-648-4000
Diehl Graphsoft	MiniCAD	Computer Aided Design	410-290-5114
Domark	Flying Nightmares	Education/ Entertainment	800-695-GAME
Dunaway Systems B.V.	Signalize 2.6	Professional Publishing	31.4902167975
	Spooler 1.2		
	PostScript Interpreter		
	Scanning & Vektorizing 2.3		
	Remote Font & Clip Art		
Extools	Shade III 1.1	Utility	81-0092-722-4540
	Shade III Light		
FIT Software	Full Contact	Office Productivity	408-562-5990
Fractal Design	Dabbler 1.0	Design/Illustration	800-647-7443
	Painter 2.0		
Frame Technology	FrameMaker	Professional Publishing	408-433-3311

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COMPANY	APPLICATION	CATEGORY	TELEPHONE
FWB Inc.	Hard Disk Toolkit	Utility	415-474-8055
	CD-ROM Toolkit		
Gibbs and Associates	Virtual Gibbs	Technical Analysis	805-654-9399
Graphisoft U.S.,Inc.	ArchiCAD 4.5	Computer Aided Design	800-344-3468
Gryphon Software	Morph!	Multimedia	patch on AOL
GTFS/GRAFTEK	Ultimage/Pro(Optilab/Pro)	Technical Analysis	331-46-92-14-89
Hash Inc.	Animation Master	Multimedia	206-750-0042
Hi Resolution Limited	Mac≈Bac 1.1	Technical Analysis	800-455-0888
	MacPrefect Remote 1.0.1	Utility	
	MacVisa 1.1		
Insignia	SoftWindows 286	DOS/Windows Compatibility	800-848-7677
Interstudio	Domus.Cad71	Computer Aided Design	39-573-31307
	flex•plan 1.0		
	Nonio C 5.0		
ITEDO Software GmbH	IsoDraw 2.6	Computer Aided Design	49-2241-68841
Jasik Designs	MacNosy	Utility	415-322-1386
Just Systems	ATOK8	Networking	81-03-5470-6028
Language Engineering Corp	LogoVista E to J	Office Productivity	617-489-4000
Macro Educational Systems	SASI (elementary school version)	Education/ Entertainment	714-768-6000 Ext. 1
Maris Multimedia Ltd.	Redshift	Education/ Entertainment	510-652-7430
MedImage	MedView	Technical Analysis	313-665-5400
Metrowerks	CodeWarrior	Utility	514-747-5999
Microland	Le serveur maestria 2.0	Office Productivity	33.16-8739-3900
MicroMacro, Ltd.	MicroGuard ADB Copy Protection	Utility	972.3 562.5661
Neon Software	LAN Surveyor 1.1	Networking	510-283-9771
	NetMinder Ethernet 3.1		
Now Software	Now Contact	Office Productivity	800-237-2078
Orange Micro Inc	OrangePC	DOS/Windows Compatibility	714-779-2772
ORKIS	ImageBasePro 2.5	Multimedia	33-42-60-45-56

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COMPANY	APPLICATION	CATEGORY	TELEPHONE
Pole Position Software GmbH	Mac DCF77	Networking	49-9134-7447
Radius	Lemans GT	Professional Publishing	408-434-1010
	PrecisionColor Pro 24X, 24XK, ProXP, 24X, and 8XJ		
Route 66 Geo Info Systems	AtomicTime	Utility	31-8385-54724
	SignPost 1.2.0 (Route 66 1.2.0)	Education/ Entertainment	
SCITEX America	Full Auto Frame	Professional Publishing	617-275-5150
Segue Software	QA Partner	Networking	617-969-3771
SOFT Technologies	Simulateur de conduite 1.2	Technical Analysis	3365-40-05-05
SofTeam Hardware&Software Dist	MacSign 4.0	Design/Illustration	39-39-2012366
	Punto 1.6		
Sorting S.r.l.	CADSap4.0	Computer Aided Design	39.6-44291061
Specular	Infini D	Animation/3D Rendering	800-433-7732
Spider Island Software	Telefinder Group Edition	Networking	714-669-9260
Strata Inc.	StudioPro	Multimedia	800-678-7282
System Clinic	DTP603 1.0j	Professional Publishing	078-811-2318
Trillium Research	Remus (ltd version)	Utility	715-381-1900
Trio Systems Europe	C-Index Pro 1.0	Utility	31-20-638-6507
TrueD Software	Live on RISC	Technical Analysis	33-865-784950
UserLand Software	Frontier 3.0.2	Utility	415-369-6600
usrEZ Software	ultraSecure 3.0	Utility	714-756-5140
VAMP	McCAD Trailblazer	Technical Analysis	213-466-5533
VICOM Technology Ltd	VICOM MultiTerm, Pro SDK 5.0, and RunTime	Networking	604-684-9517
VideoFusion	Recorder	Multimedia	800-638-5253
	VideoFusion		
Wilkensen SCOOP	SCOOP Archive 1.1	Networking	48-8-6002600
Wolfram Research	Mathematica	Technical Analysis	800-441-6284
WordPerfect	WordPerfect	Office Productivity	800-451-5151

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Products to Ship in the Next 90 Days or Less

These products will ship in the next 30 (marked with *), 60 (marked with **), or 90 (marked with a ***) days:

COMPANY	APPLICATION	CATEGORY	TELEPHONE
DCA	MacIrma *	Networking	800-348-3221
Hi Resolution	Locksmith *	Utility	800-455-0888
High Performance Systems	Stella II *	Technical Analysis	603-643-9636
	ithink *	Office Productivity	
Imagine That	Extend *	Technical Analysis	408-365-0305
Jabra	JABRA Dialer *	Networking	800-327-2230
On Technology	MeetingMaker XP *	Office Productivity	800-548-8871
Snow International	Atlantis *	Education/ Entertainment	813-784-1845
Adobe Systems	Dimensions **	Multimedia	800-521-1976
	Premiere **		
Alias Research	Sketch **	Computer Aided Design	800-447-2542
Articulate Systems	Personal Secretary **	Office Productivity	800-443-7077
Bungie Software	Marathon **	Education/ Entertainment	312/563-6200
Formula GmbH	RUN EDS **	Computer Aided Design	612-755-9043
RasterOps Corp.	Paintboard Turbo XL **	Peripherals	408-562-4200
	MoviePack **		
Ray Dream	Ray Dream Designer **	Technical Analysis	800-846-0111
Claris Corporation	MacWrite Pro ***	Office Productivity	800-3-CLARIS

Shareware Applications

In addition these shareware applications are shipping and available via online services:

COMPANY	APPLICATION	CATEGORY	TELEPHONE
Aaron Giles	JPEG View	Utility	Major networks
Bill Goodman	CompactPro 1.35P	Utility	Major networks
Scott Berfeld	Speedometer 4.0	Utility	Major networks
Ziff Davis Labs	MacBench 1.1	Utility	Compuserve

Watch the Information Alley for future releases.

Making a Backup on Your Newton

From the Technical Information Library

Accidents sometimes happen.

That's why it is always a good idea to backup your data – whether on a Newton MessagePad or a Macintosh computer. This article describes how to make a backup of your Newton, as well as how to restore backup data.

There are two ways to backup the data on your Newton:

- Using the Newton Connection Kit
- Using a PCMCIA Type II storage card

Using the Newton Connection Kit

It is easy to use the Newton Connection Kit to backup up your data to a Macintosh. When you synchronize your Newton MessagePad with the Newton Connection Kit, it performs a backup of the data on your Newton to the Macintosh system to which you connect. Follow the procedure described in your Connection Kit documentation to connect and synchronize the Connection Kit. Once you have done this, you will find three files displayed on your Macintosh:

- Newton
- Newton Archive
- Newton Backup

These three files contain information stored on your Newton MessagePad.

Newton

The file named Newton contains the current backup of all of your Newton's data. You can also use this file, along with the Connection Kit, to add data to your Newton. To do this, enter into this file and synchronize your Newton with the Connection Kit. Your Newton is updated with this new data. Remember that the new data from the Connection Kit replaces all existing data on your MessagePad.

Newton Backup

This file is a copy of the previous synchronization file. When you synchronize, the current synchronization file (the file named Newton) is renamed to Newton Backup, which completely overwrites the old Newton Backup file. Then, a new synchronization file (or Newton file) is created. If you want to keep a copy of the Newton Backup file, you must duplicate it before synchronizing.

Newton Archive

This file contains all information deleted from your Newton since the last time you synchronized. You can use this archive file to recover data that you've inadvertently deleted from your Newton.

During synchronization, the Connection Kit looks at the Newton Backup file to determine which data you've deleted from your Newton since your last synchronization. This data is then copied from the Newton Backup file to the Newton Archive file.

Using a PCMCIA Type II Storage Card

You can keep a backup copy of your Newton's data on a PCMCIA Type II

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storage card, then restore your data to your Newton from that card.

Making a Backup

These steps describe how to backup to a storage card:

STEP	ACTION
1	Insert a storage card into your Newton. **NOTE:** Each storage card can only store one backup copy. Existing backup copies are erased to make room for the new one.
2	Tap **Extras**, then tap **Card**. When the dialog box appears, tap **Backup**. When your Newton is finished backing up data, the message box disappears.

Restoring a Backup

These steps describe how to restore information from a storage card:

STEP	ACTION
1	Insert the storage card with your backup copy into your Newton.
2	Tap **Extras**, then tap **Card**. You see a dialog box that shows the contents of the storage card.
3	Tap **Restore**. You see a dialog box that reminds you that you are replacing all of the information in your Newton. This procedure overwrites all data currently in your Newton. Tap **OK** if you want to continue or **Cancel** to stop.

Regardless of the method you select, remember to make regular backups!

Generic Icons After System 7 Installation

From the Technical Information Library

You upgrade to System 7 and complete the installation successfully. But when you restart, you find that all your icons (including system extensions, Control Panels, and applications) look generic. Disk First Aid says no repair is necessary. Everything seems to be there, and the Macintosh boots with no problems. Rebuilding the desktop does nothing. What's going on?

There was enough room on the hard disk to successfully install the system software, but not enough room to build the desktop correctly.

The solution is to move or delete some files to make more room on the hard disk and rebuild the desk top. You will find that all of your icons are restored.

Quick Questions and Answers

Q: Where do I find accents (or other diacritical marks) on the keyboard?

A: Open the Key Caps desk accessory to view the various characters available in the current font. To create accented characters, press the **Option** or **Shift-Option** AND the key with the diacritical mark, then press the letter.

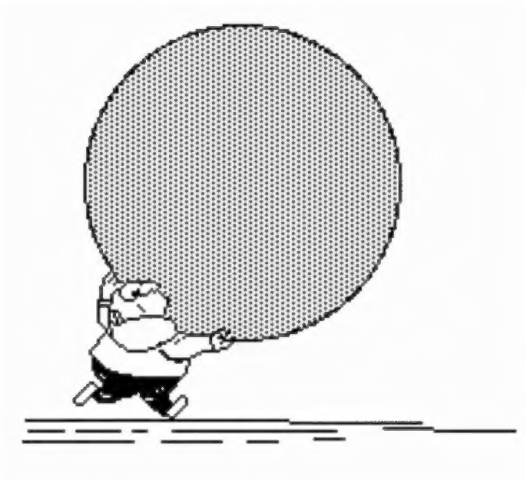
Q: How do I know if a font is loaded properly into the System folder?

A: A good test is to open the Key Caps desk accessory and check the Key Caps menu in the White Menu bar. If the font appears there, then its bit mapped or TrueType font file are properly loaded into the Fonts folder.

Keeping Your Trackball Healthy

From the Technical Information Library

Most PowerBook trackball problems are due to contamination of the rollers. The trackball is just like the standard Apple mouse in that dust and debris can accumulate on the rollers and impede smooth movement of the trackball.



Symptoms of a Dirty Trackball

Symptoms that your trackball is dirty include:

- The trackball appears to "stick" or "jump" when rolled.
- The cursor will not track horizontally or vertically.
- It sometimes seems like the cursor is "hitting a wall".
- On-screen buttons fail to activate when you click on them.
- The movement of the cursor on the screen isn't smooth.
- The trackball is physically difficult to roll.

Cleaning the Trackball

Here's how to clean the trackball and prevent malfunction:

STEP	ACTION
1	Remove the trackball retaining ring by turning it counterclockwise until it pops out (about 1/4 turn). You don't need tools for this; you can just press against the two small ridges on the ring with your fingernails.
2	Lift the trackball out of its cavity.
3	Locate the small rubber rollers at the left and bottom sides of the trackball cavity. Depending on the model, the rollers may look like small rings or wheels.
4	Use any reasonably clean, blunt object (such as your finger or a cotton swab) to wipe off the rollers. Do not use any liquid, including any amount of cleaning fluid or water, inside the computer.
5	Locate the three white or red bearings located at approximately clockwise 4:00, 7:00, and 11:00 in all PowerBooks except the PowerBook 100, which has three black posts instead of bearings. (The posts may need cleaning in the same manner as the bearings.) Using a fingertip, dry cotton swab, or other blunt object, clean them of any debris.
6	Replace the trackball and retaining ring.

In addition, on a PowerBook 140 or 170, reseating the cables on the trackball and keyboard may solve the problem. This is very effective if the failure is related to the computer heating up. These cables are located inside the PowerBook, so your authorized service provider or Apple must do this.

Tips and Tidbits

Every Macintosh plays interesting noises if it fails its internal RAM check. You can harmlessly force it to fail its check by pressing the **Interrupt** button (the small button with the circle on it, next to the **Reset** button, which has a triangle on it) on your system immediately after it starts booting up. Macintosh II systems play interesting chimes, Quadra AVs play drum solos, LCs play a flute, and the Power Macintosh plays a sound of a car wreck with glass breaking. Contributed by Rick Warfield.

New Places to Find the Information Alley

The Information Alley has recently been added to these on-line services and bulletin boards. Please let us know if you are uploading the Information Alley to other locations, so that we can list it here:

- Internet

  We now have an Information Alley list server on the Internet. If you access the Internet directly (not through a service such as Compuserve or America Online) you can subscribe to the Information Alley by sending this message:

  To: **listproc@spock.austin.apple.com**
  Subject: **The Information Alley**
  Body of message: **SUBSCRIBE infoalley <your name>**

- Internet

  Sent to **macgifts@sumex-aim.standord.edu** and **macgifts@mac.archive.umich.edu**, who then post to all Macintosh ftp sites.

- Compuserve

  MAUG forums → Mac Community Forum → Library 8 – Magazines/Reviews

- MAConnect BBS (Santo Domingo, Dominican Republic)

  809-534-5788 (Login as GUEST; no password required)

- digitalNation BBS (Washington DC metropolitan area)

  703-642-0453

- Overture BBS (Washington DC metropolitan area)

  703-620-3391

- Biscayne Villa BBS (Washington DC metropolitan area)

  703-243-5248

- Washington Apple Pi BBS (Washington DC metropolitan area)

  301-986-8085

- University Of Manitoba – Micro Resource Centre – World Wide Web Server

  Enter this URL from NCSA Mosaic: **http://www.umanitoba.ca/mrc/documentation/macintosh/InfoAlley/InfoAlley.html**

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_____

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Did you find any specific article especially useful? YES NO If YES, list which one:

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Primary software applications: _____

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